



Automation of Fuel management system in two wheeler vehicles

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ABSTRACT

In today's world, actual record of fuel filled and fuel consumption in vehicles is not maintained. It results in a financial loss. A vehicle is a machine that transports people or cargo. Vehicles includes wagons, bicycles, Motor vehicles, (cars, trucks, busses), railed vehicles (trains, trams) and water crafts etc. The concept mainly focuses on the two wheeler vehicles. It is essential that a vehicle have a source of energy to drive it. Most common type of energy source is fuel. Implementing the fuel management system in two wheeler vehicles is the basic need as we are unaware about the amount of fuel present in the fuel pump. The fuel consuming vehicle users find it very difficult if the fuel station doesn't contain fuel in it. In this world fuel of advanced technologies, everywhere vehicles are found out. The main objective of the project is to get the fuel availability status is the petrol pump, also hardware containing microcontroller along with GSM, GPS & load cell will show exact amount of fuel present at fuel tank.

Keywords

GPS, GSM, Android Studio, Google Map, Arduino Uno Kit.

1. INTRODUCTION

This paper puts emphasis on the basic terminologies and the introductory concepts in fuel monitoring and fuel management system. The chapter describes the basic definition of fuel, types of hardware used that applies to the context. The challenges of successful monitoring involve efficient and specific

design and a commitment to implementation of the monitoring project from data collection to reporting and using results. Fleet tracking is the use of GPS technology to identify locate and maintain contact reports with one or more fleet vehicles. The location history of individual fleet vehicles allows precisely time-managed, current and forward journey planning, responsive to changing travelling conditions. Applications of commercial vehicle tracking solutions in the fields of transport, logistics, haulage and multi-drop delivery environments can include optimized fleet utilization, operational enhancements and dynamically remote-managed fleets. Fleet tracking is scalable by design and interfaces with the logistics industry's leading back-office systems. Rising fuel costs constantly challenge fleet operators to maintain movement of vehicles and monitor driver behaviour to avoid delaying traffic conditions by either, combining deliveries, reconfiguring routes or rescheduling time and distance. Escalating oil prices are increasing costs for many businesses, particularly those with large vehicle fleets, adding a powerful financial impetus to the search for fuel efficiency.

2. PROBLEM STATEMENT

One of the problems occurring in current scenario is that people don't know the fuel availability status at the petrol pump due to which people suffers a lot. In case of males still it is okay if their petrol dries off. They can manage with that situation but in case of women if they suffer with same problem especially when the nearby petrol pumps doesn't have petrol in it they can be in huge trouble.

Second problem is that the indication of low fuel is not shown in some of the two wheeler vehicles and what distance the vehicle will cover in the available petrol under the fuel tank.

3. LITERATURE SURVEY

The survey presents the critical analysis of the existing literature which is relevant to the fuel management system and the mechanisms associated with it.

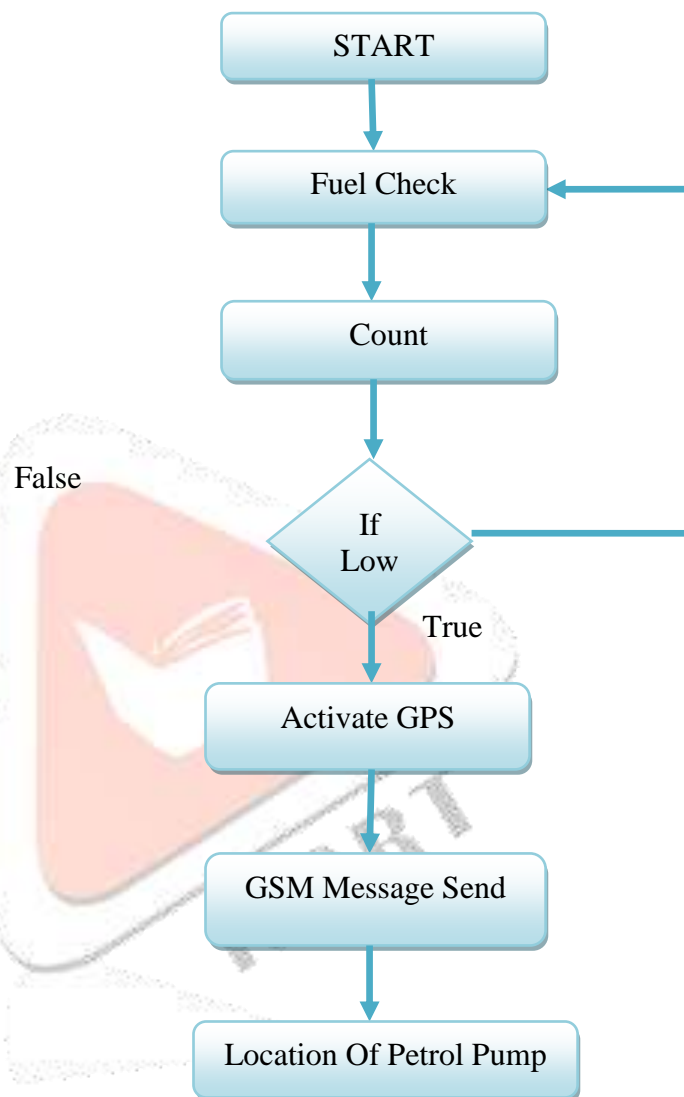
Usage of two wheelers is the major transportation employed by public. Starting from a big town or a city to the small village two wheeler vehicles are the most easiest, convenient and cheaper transportation. Various reasons that folks use two wheelers instead public transportation is that convenient home service, feasible, and affordable to all. However the basic need of the time to use the two wheeler vehicle is its energy that is fuel. Vehicles consumes petrol and without fuel vehicle is of no use. But there are lots of cons besides its good usage. That is sometimes people face problem while there petrol dries off. There is the facility called google map which shows the nearby petrol pumps but in cases if petrol pump doesn't contain petrol pump in it then there arises a problem. There is no such facility available for the petrol pump availability status also vehicles do not show the exact amount of fuel present in the fuel tank . The proposed system deals with overcoming the issues stated above. The system is an android application which is made for the petrol pump manager. Also hardware is made which shows the exact amount of fuel present in the fuel tank of the vehicle. The platform chosen for this type of system is android; Reason behind android software has come au courant very large scale and is owned almost by every person. Also android may be a user friendly platform, thereby enabling easy access for the complete user. Variety of applications made for the android software is increasing on an outsized scale ever since its advent. Android is an open source mobile software environment.

4. PROPOSED SOLUTION

Efficient and optimized work is nowadays the basic need of the hour. The main goal of the proposed work is to nullify the problem that people face regularly these days. For that we have come up with an idea of monitoring the fuel and showing the availability status of the petrol also we have added one hardware for dashboard of the vehicles which will show the exact petrol count in the fuel tank. : An application has been made named "petrol pump". This

application will have two clicks called as ADMIN and PETROL PUMP MANAGER with all its inner functionalities which will solve the problem of fuel availability status. The hardware has been made measuring the exact fuel count under petrol tank .

5. SYSTEM OVERVIEW:



DESCRIPTION

The application has been developed which will show fuel availability status in fuel station vehicle has been improved with hardware which will show exact fuel present in fuel tank and up to where the vehicle will travel in the amount of fuel present in fuel tank.

Low Fuel Indication: The Programming done in embedded C for interfacing the load cell with the controller called as arduino uno kit will detect the fuel count of petrol available in the fuel tank of two wheeler vehicle. If the fuel count is sufficient or above average then flow will go on in

continuous way but if fuel count is detected low then GPS will get activated.

6. CONCLUSION

In the country like india there is increasingly growing number of people with the use of two wheeler vehicle but without fuel. It is impossible to drive the vehicle. In this advance world petrol pump are tracked through google map due to which pumps are tracked but the fuel availability status is not show which leads to waste of time and people faces trouble. Here the application has been developed which will show fuel availability status in fuel station. Vehicle has been improved with hardware which will show exact fuel present in fuel tank and up to where the vehicle will travel in the amount of fuel present in fuel tank.

In this dissertation we have developed one android application which has certain points in it, that are petrol pump, admin and user. The project is done which will have the android application that is developed with the admin of particular petrol pump. He will manage everything with a single click of android application.

Project also concludes the 75% work related to hardware that is the interfacing of GSM and GPS with arduino-uno kit.

7. FUTURE SCOPE

Whatever may be the problem in the two wheeler our system will detect the issue and highlight it on the dash board.

The amount of air present in the tyres will also be known.

We are also planning to take our project getting implemented on changing vehicles along with changing stations. Not only in two wheeler but also on other transport vehicles the project will be implemented.

8. REFERENCES

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